

Appl. No. 09/703,419
Amdt. Dated April 22, 2005
Reply to Office Action of February 24, 2005

REMARKS

Claims 1, 4, 6, and 10 through 15, remain pending in this case. Claims 1, 4, 6, 10, and 12 through 15 have each been currently amended. Claims 2, 3, 5, and 7 through 9 have each been canceled.

Claim 2 has been objected to. Since Claim 2 has been canceled, the objection is moot.

Claim 1 is rejected under 35 U.S.C. 112, for use of the phrase "such as." Claim 1, as currently amended, now avoids the use of such wording and now meets all the requirements of 35 U.S.C. 112.

"Claims 1-2, 4-7, 9 and 12-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Cheong US 6,005,609 in view of Saburi US 6,556,235."

Before distinguishing the claims as now presented from the cited references, it is important to understand the main purpose of the invention as now claimed. More specifically, on page 1, lines 23 through 28, it is indicated that conventional hand-held devices incorporating cameras lack stability of the image content, as a user manipulates the device. The present invention as taught provides solely electronic processing without the use of a motor or motors for providing a stable image in a hand-held device incorporating imaging means, even with movement of a user's hand holding the device.

On page 4, line 33, extending into page 5, it is indicated that the present invention can in one embodiment use an electronically adjustable camera 102 having a wide field of view. It is also indicated on lines 8 through 10 on page 5, that the invention uses a camera having only electronic zoom capability. It is further indicated that the invention can utilize a camera having only electronic pan, tilt, and zoom (see page 5, lines 3 and 4). As further taught in the present Application, as long as an object remains in the wide

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field of view of the camera, the electronic processing utilized tracks and maintains the framing of the object of interest in the image or images in order to maintain stabilization of the image in the presence of movement of a user's hand holding the hand-held device.

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Cheong does not teach the use of hand-held devices, and is clearly not concerned with maintaining a stable image even in the presence of a user moving their hand which is holding a hand-held device. In Cheong, his camera is stable, apparently on a mount, whereby the camera is moved by a motor to orient the camera to track an object of interest. Note also that if the camera of Cheong is vibrated or moved by some force other than movement via the tracking motor, or even with vibration of the tracking motor itself during movement of the camera, there is no teaching in Cheong of a continuous electronic adjusting system for providing a stable image at all times.

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With regard to Saburi, Applicants agree that Saburi discloses a portable videophone unit. However, Saburi does not disclose or teach the use of solely electronic adjusting systems for providing a stable image in the presence of movement of a user's hand holding the portable videophone unit. Even if Cheong and Saburi can be combined, such a combination of two will clearly not provide or make obvious the invention of Applicants as now claimed. In fact, Cheong himself teaches away from Applicants invention, and Saburi clearly has no relation to Applicants invention other than in using a portable videophone unit.

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15 Claim 1 as now presented is claiming the following:

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A method for automatically framing and tracking an object of interest using a video camera integrated into hand-held processing devices including PDAs, mobile telephones, palmtops, and portable computers to insure stability of the

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image content as a user manipulates the device, the method comprising the steps of:

providing said video camera with a wide field of view;

5 continuously detecting relative movement between the hand-held device and the object of interest within a displayed image generated by said camera; and

10 continuously electronically adjusting the camera, without use of a motor, in response to the detected relative movement, so as to maintain a desired framing and tracking of the object of interest within an image and/or successive images, as long as the image or images remain in the field of view generated by the camera for selectively providing either one of a still picture of the object or video image of the object, respectively, for providing a stable image in the presence of 15 movement of a user's hand holding said device.

15 Claim 1 as currently amended is clearly patentable over Cheong and Saburi, whether taken individually or in any combination. As previously indicated, Cheong relies on the use of a motor to move his camera, and is not concerned at all with providing a stable image in the presence of movement of a user's hand holding a hand-held device incorporating a camera. Applicants are claiming the step of "continuously electronically 20 adjusting, without use of a motor, the camera in response to the detected relative movement . . ." Cheong cannot frame and track an object of interest without use of a motor. Saburi does not teach the steps of Claim 1 (currently amended). Note also that neither Cheong or Saburi teach the use of a ". . . video camera with a wide field of view" 25 as claimed by Applicants. Accordingly, Claim 1 (currently amended) is free of these references.

Claim 4 (currently amended) is now claiming "The method of Claim 1 wherein the camera is physically adjustable by a user." On page 6 of the present specification, lines 16 through 19, it is indicated that "The user will typically adjust the camera by

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moving the hand-held device until the desired object of interest is properly framed within an image signal created by the camera and displayed to the user via the device display 106." Such physical adjustment of framing by a user, in combination with stabilizing the image maintained in the field of view of the camera is clearly not anticipated or made 5 obvious by the cited references whether taken individually or in any combination.

Claim 6 (currently amended) is now claiming "The method of Claim wherein the camera has one or more of solely electronically adjustable pan setting, an adjustable tilt setting, and an adjustable zoom setting performed without use." Cheong requires the 10 use of a motor in order to perform PTZ adjustments. Saburi does not teach such "solely electronically adjustable" settings. Accordingly, for this reason alone, Claim 6 (currently amended) is patentable. Also, Claim 6 (currently amended) is patentable for at least the same reasons as Claim 1 (currently amended) from which it depends.

15 Claim 12 (currently amended) is patentable for at least the same reasons as Claim 1 (currently amended) from which it depends.

Claim 13 as currently amended is claiming the following:

20 The method of claim 1 wherein said step of continuously electronically adjusting the camera is based at least in part on a hybrid combination of an orientation determination operation and an image processing operation.

25 Neither Cheong or Saburi, taken individually or in combination, teach the ". . . hybrid combination" of Claim 13 (currently amended). More specifically, the ". . . orientation determination operation" is provided by a gyroscope, for example, as taught on page 5, lines 16 through 19, of the present specification, whereby the output of the gyro is utilized by the electronic processing for determining the relative movement between a user's hand holding the device and the image, in order to electronically stabilize the

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image. Such use of an orientation determination operation and an image processing operation for stabilizing an image is not taught or made obvious by Cheong and Saburi. Accordingly, for this reason alone, Claim 13 (currently amended) is patentable. Also Claim 13 (currently amended) is patentable for at least the same reason as Claim 1 (currently amended).

Claims 14 and 15, each as currently amended, are patentable over the cited references whether taken individually or in any combination, for reasons similar to those provided for Claim 1 (currently amended).

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Claim 3 is rejected over Cheong in view of Saburi. Since Claim 3 has been canceled, this rejection is now moot.

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Claim 8 is rejected as being unpatentable in view of the teachings of Cheong, Saburi and Yerazunis et al. (US 6,600,657)." Claim 8 has been canceled. Accordingly, this rejection is now moot.

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"Claims 10-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Cheong in view of Saburi as applied to claim 1 above and further in view of Vincent 6,195,122." Claim 10 as currently amended is now claiming the following:

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The method of claim 1, wherein said step of continuously electronically adjusting the camera is based at least in part on an output of an orientation determination device integrated into or otherwise associated with the hand-held device, for detecting relative movement between said device and an object of interest caused by movement of a user's hand.

The cited references, whether taken individually or in any combination, are not believed to teach the use of such a "orientation determination device for detecting relative

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movement between said device and an object of interest caused by movement of a user's hand." Accordingly, for this reason alone, Claim 10 (currently amended) is patentable. Also, Claim 10 (currently amended) is dependent from Claim 1, and as such is patentable for at least the same reasons as Claim 1 (currently amended).

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Claim 11 is dependent from Claim 10. Accordingly, Claim 11 is patentable for at least the same reasons as Claim 10 (currently amended).

10 Applicants have shown that the claims as now presented are patentable over the cited references, whether taken individually or in any combination. Accordingly, it is respectfully requested that the claims be allowed, and the case passed to issue.

Respectfully submitted,

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